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PATENT

Attorney Docket No.: 02307O-087130US

Client Reference No.: 2000-468-2

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By: Karen Karlin

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of:

VREELAND, Valerie

Application No.: Not yet assigned

Filed: Herewith

For: RECOMBINANT MINIMAL  
CATALYTIC VANADIUM  
HALOPEROXIDASES AND THEIR  
USES

Examiner: Not yet assigned

Art Unit: Not yet assigned

INFORMATION DISCLOSURE  
STATEMENT UNDER 37 CFR §1.97 and  
§1.98

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

The references cited on attached form PTO/SB/08A and PTO/SB/08B are being called to the attention of the Examiner. In accordance with 37 CFR §1.98(d), copies of the references can be found in Application No. 09/596,794, filed June 19, 2000 (Attorney Docket No. 02307O-087110US). It is respectfully requested that the cited references be expressly considered during the prosecution of this application, and the references be made of record therein and appear among the "references cited" on any patent to issue therefrom.

As provided for by 37 CFR 1.97(g) and (h), no inference should be made that the information and references cited are prior art merely because they are in this statement and no

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Applicant believes that no fee is required for submission of this statement.

However, if a fee is required, the Commissioner is authorized to deduct such fee from the undersigned's Deposit Account No. 20-1430. Please deduct any additional fees from, or credit any overpayment to, the above-noted Deposit Account.

Respectfully submitted,



Chuan Gao  
Reg. No. 54,111

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PTO/SB/08A (08-00)

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|   | Application Number   |                          |                          |                        |
|   | Filing Date          | Herewith                 |                          |                        |
|   | First Named Inventor | Vreeland, Ph.D., Valerie |                          |                        |
|   | Group Art Unit       |                          |                          |                        |
|   | Examiner Name        |                          |                          |                        |
| Sheet   | 1                    | of                       | 3                        | Attorney Docket Number |
|   |                      |                          |                          | 02307O-087130US        |

| U.S. PATENT DOCUMENTS  |                          |                           |                                      |  |  |  |
|------------------------|--------------------------|---------------------------|--------------------------------------|--|--|--|
| Examiner<br>Initials * | Cite<br>No. <sup>1</sup> | U.S. Patent Document      |                                      | Name of Patentee or Applicant<br>of Cited Document | Date of Publication of<br>Cited Document<br>MM-DD-YYYY | Pages, Columns, Lines,<br>Where Relevant<br>Passages or Relevant<br>Figures Appear |
|                        |                          | Number                    | Kind Code <sup>2</sup><br>(if known) |  |  |  |
|                        | A1                       | US-<br>2002/0035245<br>A1 |                                      | Vreeland V.  | 03-2002  |  |
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| FOREIGN PATENT DOCUMENTS |                          |                         |                     |                                      |   |  |  |                |
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| Examiner<br>Initials*    | Cite<br>No. <sup>1</sup> | Foreign Patent Document |                     |                                      | Name of Patentee<br>or Applicant of<br>Cited Document | Date of Publication of<br>Cited Document<br>MM-DD-YYYY | Pages, Columns, Lines,<br>Where Relevant<br>Passages or Relevant<br>Figures Appear | T <sup>6</sup> |
|                          |                          | Office <sup>3</sup>     | Number <sup>4</sup> | Kind Code <sup>5</sup><br>(if known) |   |  |  |                |
|                          | B1                       | PCT                     | WO<br>95/27046      |                                      |   | 03-31-1995   |  |                |
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| Examiner<br>Signature | Date<br>Considered |
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<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

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| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br><br>(use as many sheets as necessary) |                        | Application Number       |                          |
|   |                        | Filing Date              | Herewith                 |
|   |                        | First Named Inventor     | Vreeland, Ph.D., Valerie |
|   |                        | Group Art Unit           |                          |
|   |                        | Examiner Name            |                          |
| Sheet <b>2</b> of <b>3</b>  | Attorney Docket Number | 023070-087130US          |                          |

| OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS |                       |  |                |
|--|-----------------------|--|----------------|
| Examiner Initials *                                | Cite No. <sup>1</sup> | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.  | T <sup>2</sup> |
|  | C1                    | Hemrika et al.; <i>PNAS</i> (1997) No. 94, pp. 2145-2149   |                |
|  | C2                    | Itoh et al.; <i>J. Biological Chemistry</i> (1986) No. 261, pp. 5194-5200  |                |
|  | C3                    | Pfeifer, et al.; <i>J. Gen. Microbiol</i> (1992) No. 138, pp. 1123-1131  |                |
|  | C4                    | Rush, et al.; <i>FEBS Letters</i> (1995) 359:244-246   |                |
|  | C5                    | Sheffield et al.; <i>Phytochemistry</i> (1993) No. 32, pp. 21-26   |                |
|  | C6                    | Shimonshi et al.; "Cloning and Expression of the Gene for a Vanadium-dependent Bromoperoxidase from a Marine Macro-alga, <i>Corallina pilulifera</i> " <i>FEBS Lett.</i> (1998) No. 428, pp. 105-110   |                |
|  | C7                    | Simons et al.; <i>European Journal of Biochem</i> (1995) No. 229, pp. 566-574  |                |
|  | C8                    | Soedjak, et al. "Inhibition and Inactivation of Vanadium Bromoperoxidase by the Substrate Hydrogen Peroxide and Further Mechanistic Studies" <i>Biochemistry</i> (October 1995) Vol. 34(39), pp. 12689-12696.  |                |
|  | C9                    | Soedjak, et al. "Mechanism of Dioxygen Formation Catalyzed by Vanadium Bromoperoxidase From <i>Macrocystis pyrifera</i> and <i>Fucus distichus</i> : Steady State Kinetic Analysis and Comparison to the Mechanism of V-BrPO from <i>Ascophyllum nodosum</i> " <i>Biochim Biophys Acta.</i> (August 1991) Vol. 1079(1), pp. 1-7. |                |
|  | C10                   | Soedjak, et al. "Characterization of Vanadium Bromoperoxidase from <i>Macrocystis</i> and <i>Fucus</i> : Reactivity of Vanadium Bromoperoxidase Toward Acyl and Alkyl Peroxides and Bromination of Amines" <i>Biochemistry</i> (August 1990) Vol. 29(34), pp. 7974-7981.   |                |
|  | C11                   | van Pee, K.H.; <i>J. Bacteriol</i> (1988) No. 170, pp. 5890-5894   |                |
|  | C12                   | Vreeland et al.; <i>Molecular Biology of the Cell 7 (Supplement)</i> 304a (1996)   |                |

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<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

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PTO/SB/08B (08-00)

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|   |   |    | Application Number       |                          |                 |
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|   |   |    | First Named Inventor     | Vreeland, Ph.D., Valerie |                 |
|   |   |    | Group Art Unit           |                          |                 |
|   |   |    | Examiner Name            |                          |                 |
| Sheet   | 3 | of | 3                        | Attorney Docket Number   | 023070-087130US |

| OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS |                          |   |  |                |
|--|--------------------------|---|--|----------------|
| Examiner<br>Initials *                             | Cite<br>No. <sup>1</sup> | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. |  | T <sup>2</sup> |
|  | C13                      | Whitwam, R.E.; "Biophys. Research Communications." <i>Biochem</i> (1995) No. 216, pp. 1013-1017   |  |                |
|  | C14                      | Wever R. et al. V. Vanadium haloperoxidases, Vanadium in Biological Systems, Physiology and Biochemistry, Chasten N.D. ed., Kulwer Academic Press, Dordrecht 1990, pp. 81-97  |  |                |
|  | C15                      | Butler A. Mechanistic considerations of the vanadium haloperoxidases, coordination chemistry Reviews, 1999, 187, 17-35  |  |                |
|  | C16                      | Colpas G.J. A functional model of vanadium haloperoxidases, J. Am. Chem. Soc. 1994, 116, 3627-3628  |  |                |

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